

JAPYGIDAE OF SOUTH AMERICA 2.
THE GENUS PROVALLJAPYX

(Insecta: Diplura)

LESLIE M. SMITH

University of California, Davis

In defining the higher categories of the Japygidae, the mandible is of prime importance. The mandible of *Provalljapyx* Silvestri 1949¹ was implied to be the same as in the genus *Evalljapyx*. Silvestri's complete description of the genus *Provalljapyx* is: "Genus similar to *Evalljapyx* Silv. with the arms of the forceps similar to each other and provided with few denticles." To the present time, this genus is monotypic, with the single species *P. lanei* Silvestri. In his description of this species Silvestri did not mention nor illustrate the mandible, so we are left to the conclusion that the mandible, as in *Evalljapyx*, is composed of three similar teeth and a prosthema.

Through the courtesy of Mr. Henry S. Dybas, of the Chicago Natural History Museum, I have been permitted to study a specimen from the State of Paraná, Brazil, collected about 200 miles southwest of the type locality for *P. lanei* which is Jabaquara, Brazil. This specimen differs somewhat from *P. lanei* but is obviously referable to the genus *Provalljapyx*. This new species shows that the mandible is strikingly different from the mandible of *Evalljapyx*. It thus becomes possible to amend the genus *Provalljapyx* and to supply many details omitted by Silvestri.

Genus PROVALLJAPYX Silvestri, 1949

Head with about 16—20 + 16—20M² mostly simple, body with stout setae mostly pinnate with 3 to 4 conspicuous pinnules, antenna with 19 to 21 segments, terminal segment nearly hemispherical with 6 to 8 large, conspicuous placoid sensillae, trichobothria 3+5+5, distal lamina of lacinia falciform, the four other laminae pestinate, lacinia falciform, without a tooth, mandible with four large teeth, some of which have secondary teeth, maxillary palpus uniformly tapered, thumb of galea not heavily sclerotized, labial palpus minute with 3 setae, or absent and represented by one long seta. *Thorax*, pronotum 6+6M, meso- and metanotum with 9—11+9—11M, legs short, setae at dorsal apex of femur: 2 pinnate and one simple, calcar setae stout, with many minute pinnulae, setae per ventral row on tarsus 2 to 3, tarsal claws subequal, empodium as long as pretarsus. *Abdomen*, tergites II to VI with about

¹ Silvestri, F., 1949, Contributo alla conoscenza degli Japygidae (Insecta Diplura). Rendiconti Soc. Italiana della Scienze detta Accademia Dei XL (1948-1949), (3)27:67-69.

² For abbreviations and terms used see: Smith, L. M., 1960, Proc. Biol. Soc. Washington, 73:262.

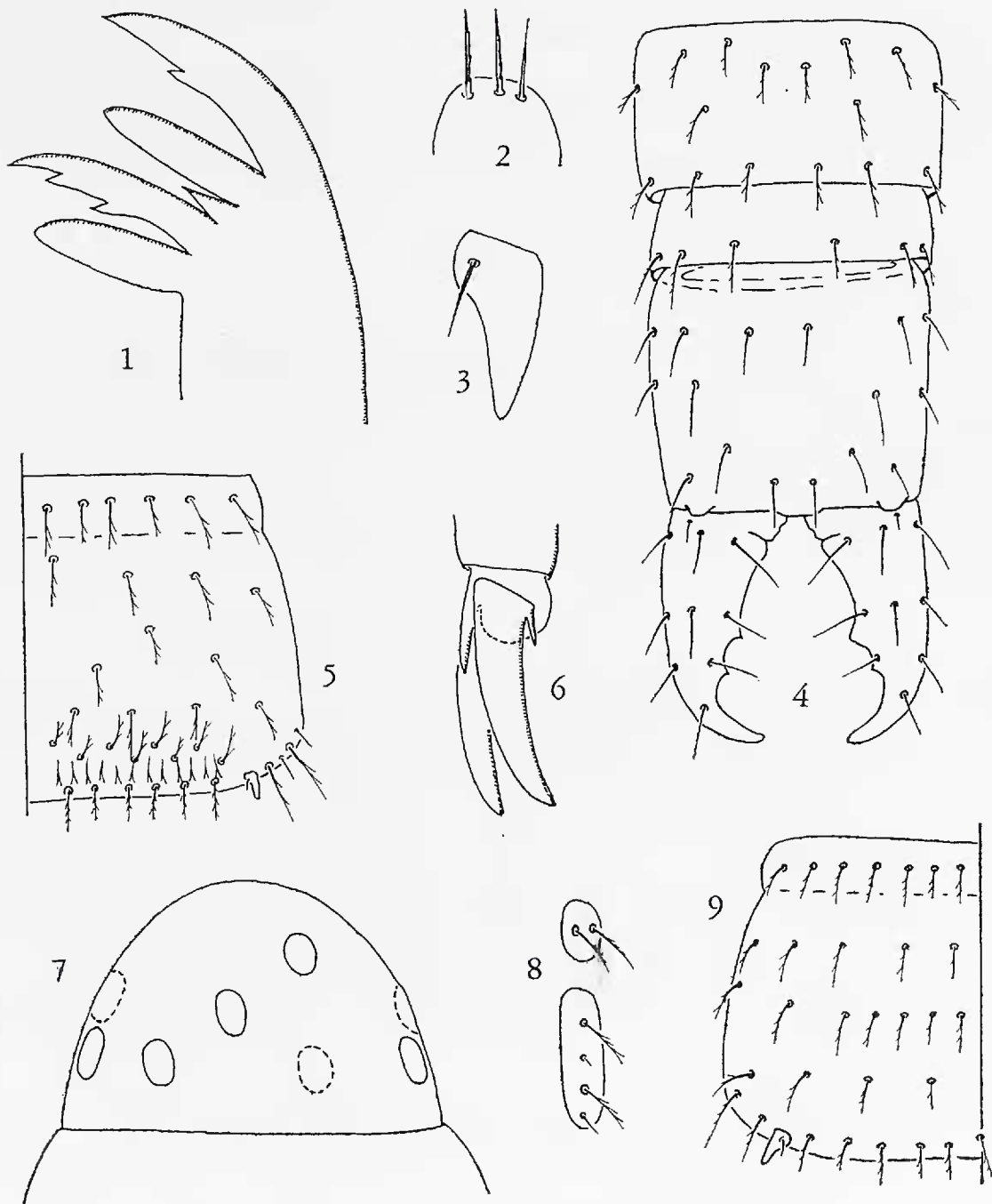
12+12M all pinnate, pleura with prepleurite 1 or 2M, and pleurite 2M, sterna, apotome about 6+6M, sternite with about 20+20M, styli broad at base, no secondary cone, one mesad seta, lateral subcoxal organs with one row of thin glandular setae, and one row of sensory setae bilaterally pinnate, antecedent setae 6—8+6—8 pinnate, in one irregular row, genitalia typical, segment X slightly wider than long, dorsally with about 8+8M, carinae absent, acropygidium very flat or absent. Forceps, twice as long as wide, dorsal articulation rounded, seta A nearly as large as adjacent seta, arms symmetrical, uniserate with few teeth and no denticles.

Type: *Provalljapyx lanei* Silvestri (original designation)

Provalljapyx brasiliensis Smith, new species

Female.—Head with 20+20M dorsally, not pinnate, and a few microsetae, lacinia with the distal, falciform lamina as long as the adjacent pectinate lamina, all laminae curved, lacinia falciform, galea with one external seta, thumb of galea slightly sclerotized, without setae, but with 5 terminal projections, terminal segment of maxillary palpus uniformly tapered toward the apex, with one median seta longer than the segment and 6 other setae, five of which are terminal, mandible with four large teeth, as follows: dorsal tooth simple, rounded, second with a sharp terminal end and two sharp lateral teeth, third simple, curved, rounded, ventral (fourth) tooth curved with one small lateral tooth, and a minute, triangular tooth between the second and third teeth, prostheca not visible; antenna with 19 segments, slightly tapered, ratio of width segment 3: width of segment 18=1.5, segment 3 with one whorl of 11 setae and one other seta posterior to the whorl, penultimate segment with about 65 setae not in distinct whorls, terminal segment as wide as long, subhemispherical, with 8 placoid sensillae, of which 6 are in a basal whorl, trichobothria one and one-half times as long as adjacent setae, segment 10 typical with anterior whorl of 17 setae and posterior whorl of 19 setae, labial palpus absent, but represented by one long seta, longer than other setae on the submentum, and a small seta. *Thorax*, pronotum 6+6M and 6+6m, mesonotum prescutum 1+1M, scutum 11+11M, and a few m, mesocoxa with 4M and 1m, trochanter with 5M, dorsal apex of femur with 2M and 1m, ventral apex of tibia with two stout, pinnate calcar setae, tarsi strongly tapered apically, setae per ventral row on tarsus two, tarsal claws with a minute, basal, ventral tooth, empodium as long as pretarsus and parallel to tarsal claws. *Abdomen*: tergite I prescutum 1+1M, scutum 8+8M, tergites II-VI with 14+14M, tergite VII with 13+13M, tergite VIII 8+8M, segment IX dorsal 3+3M, tergite X 8+8M, carinae absent, acropygidium not distinct, tergites II-VII with postero-lateral angles rounded, pleurae II-VII prepleurite 2M, pleurite 2M+1 large m and 1 small m, sternum I apotome with 6+6M, sternite 13+13M, antecedent setae pinnate 8+8 in one irregular row, lateral subcoxal organs occupying more than two-thirds of the distance between the styli, with one row glandular setae 12+12, half as long as sensory setae, sensory setae pinnate, 6+6, twice as long as seta on stylus, median glandular area not protruding, without structures, sterna II-VII apotomes with 6—7+6—7M, sternites with 23+1+23M, sternum VIII with 66+6M and 8+8M, genital orifice ringed with one row of simple setae, sper-

matophore burster not visible, segment X ventral 8+8M and a pair of large postero-median m. Forceps, seta A three-fourths as long as adjacent seta, arms symmetrical, twice as long as wide at base, dorsal articulation rounded, one median tooth and one postmedian tooth, uniserate.



EXPLANATION OF FIGURES

Fig. 1. Dorso-lateral view of tip of left mandible of *Provalljapyx brasiliensis* L. Smith. Fig. 2. Dorsal view of tip of meso-femur. Fig. 3. Ventral view of left stylus from abdominal segment III. Fig. 4. Dorsal view of abdominal segments VIII, IX, X, and forceps. Fig. 5. Ventral view of half of sternum I showing antecedent setae pointed anteriorly. Fig. 6. Pretarsus of mesothoracic leg showing ventral spine on tarsal claw. Fig. 7. Terminal segment of antenna showing 8 placoid sensillae, with all setae omitted. Fig. 8. Prepleurite and pleurite of abdominal segment III, lateral view. Fig. 9. Ventral view of half of sternum V.

Male unknown.

Length of body including forceps, 3.5 mm.

Holotype female RONDON, STATE OF PARANÁ, BRAZIL, July 1952 (Fritz Plaumann) is deposited in the collections of the Chicago Natural History Museum.

The finding reported in this paper, and in an earlier paper by Smith³, make possible a further definition of the subfamily Provalljapyginae Smith⁴. It can now be defined as follows:

PROVALLJAPYGINAE L. Smith

Body with pinnate setae, antennae with 19 to 23 segments, distal segment with 6 to 8 large placoid sensillae, lacinia falciform, mandible with three or four large teeth and several secondary teeth (except *Nanojapyx*), labial palpus small rudimentary, or absent, styli without secondary cone and with a single mesad seta (except *Eojapyx*), pleura VII not heavily sclerotized or projected to the rear, setose sac in urite III of the male, with an irregular row of plumose setae at the orifice, each connected to a long slender filament, arms of the forceps approximately similar, with few teeth, no sexual dimorphism, uniserate (except *Eojapyx*).

1. Four or more large, similar teeth, uniserate, on each arm of the forceps, tergite X with 3+3 pinnate setae, terminal segment of antenna with 6 placoid sensillae.....*Nanojapyx*
Less than four large teeth on each arm of the forceps, tergite X with more than 3+3 pinnate or simple setae, terminal segment of antenna with 8 placoid sensillae2
2. Two ventral apical tarsal setae modified and projecting between the tarsal claws, two setae on each stylus, mandible with 3 large teeth and 10 secondary teeth, segment X longer than wide, forceps smooth, each arm with 3 minute basal teeth and 3 superior denticles.....*Eojapyx*
Without setae projecting between the tarsal claws, one seta on each stylus, mandible with 4 large teeth, some of which carry secondary teeth, segment X wider than long, forceps smooth, each arm with a large postmedian tooth, uniserate (*Provalljapyx*)3
3. Labial palpus present, rudimentary, with 3 setae, tergite X with 9+1+9M, some of which are pinnate, antennae with 21 segments, metanotum 9+9M*P. lanei* Silvestri
Labial palpus absent, represented by two setae, tergite X with 8+8M, all of which are simple, antenna with 19 segments, metanotum 12+12M*P. brasiliensis* L. Smith

³Smith, L. M., 1960, Proc. Biol. Soc. Washington, 73:262.

⁴Smith, L. M., 1959. The Japygidae of North America 1. Provalljapyginae and *Nanojapyx*. The Pan-Pacific Entomologist 35(2):99-107.

In his paper Silvestri⁵ mentioned two paratype specimens collected at Jabaquara, Brazil, and adult, (sex unknown), with 19 segments in the antenna, and a larva (third instar) also with 19 segments. Silvestri did not state the sex of the type specimen, but it was probably a female since he did not mention the setose sac in urite III of the male. He also mentioned another specimen with 19 segments in the antenna, sex unknown, collected at Posades, Misiones, Argentina, and placed this also in the species *P. lanei*. If these specimens could be studied, it is probable that those from Jabaquara with 19 segments in the antenna are *P. brasiliensis*. There are thus only five specimens known for the genus *Provalljapyx*.

A NOTE ON THE CARDER BEE
ANTHIDIUM JUNODI MELANOSOMUM CAMERON

(Hymenoptera: Megachilidae)

J. S. TAYLOR

Port Elizabeth, Republic of South Africa

On 28 January 1960 while inspecting the vials which, inserted in a block of wood, form artificial nest sites for solitary bees, and several of which were occupied by a leaf-cutting species of Megachilidae at the time, some white silky material was noted at the base or inner end of one of them. A little later a hitherto strange species of bee arrived at the nest site, and after darting about from side to side with much humming it entered the vial concerned and was seen working busily within. This bee was subsequently identified as *Anthidium junodi melanosomum* Cameron, a common and widely distributed species of carder bee in South Africa. This is so far the only occasion upon which any carder bee has used these artificial nests, while this particular individual is the only one of its species to have done so. The following is an account of its activities at the artificial nests.

As already mentioned, the bee was first observed on 28 January; it remained in the vial overnight and was still present on the following morning. The next few days were cold, damp and overcast, and it was not until 4 February that the first cell at the

⁵ Silvestri, F., 1949, Contributo alla conoscenza degli Japygidae (Insecta Diplura). Rendiconti Soc. Italiana della Scienze detta Accademia Dei XL, (3)27:67-69.